REMARKS

The above Amendments and these Remarks are in reply to the Office Action mailed October 6, 2003. Claims 1-38 were pending in the Application prior to the outstanding Office Action. Claims 2-3, 23-29 and 36 are presently canceled. Claims 1, 6, 8, 11, 14, 15, 18, 21 and 31 are presently amended. New claims 39-49 are being added. Claims 1, 4-22, 30-35 and 37-49 remain for the Examiner's consideration. Reconsideration and withdrawal of the rejections are respectfully requested.

I. Claim Objections Claims 2-3 were objected to because of minor informalities. These objections are moot, since claims 2 and 3 have been canceled.

II. Claim Rejections Claims 1-5, 8-10, 14-17, 20-21, 23, 25, 28-30 and 31-38 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Lee (U.S. Patent No. 4,789,801). Claims 6-7, 11-13, 18-19, 22, 24 and 26-27 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Lee as applied to claims 1, 8, 14, 15, 21, 23 and 25.

Claim 1, as amended, is reproduced below for the convenience of the Examiner.

1. An electro-kinetic air transporter-conditioner, comprising:

a housing having an inlet and an outlet;

a voltage generator; and

an electrode assembly including:

a first array of electrodes having at least two first electrodes; and

a second array of electrodes having at least three second electrodes electrically connected to one another, located downstream from said first array, said at least three second electrodes including two outermost second electrodes and one or more inner second electrode located between said outermost second electrodes, wherein each said inner second electrode in said second array is a greater distance downstream from said first array than said outermost second electrodes in said second array;

wherein said voltage generator provides a voltage potential difference between said first array of electrodes and said second array of electrodes.

As can be seen, claim 1 requires a second array of electrodes that includes "two outermost second electrodes and one or more inner second electrode located between said

outermost second electrodes, wherein each said inner second electrode in said second array is a greater distance downstream from said first array than said outermost second electrodes in said second array." An exemplary system according to claim 1 is shown in FIG. 6B of the present application, which includes a first array of electrodes 230 and a second array of electrodes 240. The two outermost second electrodes are labeled 242-1 and 242-4, in FIG. 6B. The inner second electrodes, which are labeled 242-2 and 242-3, are located between the two outermost second electrodes 242-1 and 242-4.

Only one ion direction flow path is created between each outermost second electrode 242-1, 242-4 and the first array of electrodes (path A for second electrode 242-1, and path F for second electrode 242-4), whereas two ion direction flow paths are created for each inner or middle second electrodes 242-2 and 242-3 (paths B and C for second electrode 242-2, and paths D and E for second electrode 242-3). By positioning the inner second electrodes 242-2 and 242-3 a greater distance downstream from the first array 220 than the two outermost second electrodes 242-1 and 242-4 (i.e., distance X2 is greater than distance X1 shown in FIG. 6B), the electric field generated at the nose (i.e., most upstream portion) of each of the second electrodes is substantially similar, as explained in paragraph [0080] of the specification. This is because the electric field produced at the nose of each second electrode is proportional to the quantity of ions that contact the nose of the second electrode and the distance ions travel before reaching the nose of the second electrode, as explained in paragraph [0081].

In comparison, when the nose of all the second electrodes are the same distance from the first electrode array (e.g., as shown in FIG. 5B of the present application), the electrode field at the noses of the inner second electrodes 242-2 and 242-3 will be greater than the electric field at the noses of the outermost second electrodes 242-1 and 242-4. This is because, as just explained, the electric field produced at the nose of each second electrode is proportional to the quantity of ions that contact the nose of the second electrode and the distance ions travel before reaching the nose of the second electrode. More specifically, in FIG. 5B, the distance ions travel from the first array to the second array are the same for all ion direction flow paths A, B, C, D, E and F. Yet, the noses of the inner or middle electrodes 242-2 and 242-3 receive two ion paths (i.e., the nose of second electrode 242-2 receives ions via path B and C; and the nose of second electrode 242-3 receives ions via path D and E), while the noses of the outer second electrodes 242-1 and

242-4 receive only one ion path each (i.e., the node of second electrode 242-1 only receives ion path A; and the nose of second electrode 242-4 only receives ion path F).

By moving the inner or middle second electrodes further downstream, e.g., as shown in FIG. 6B, and as required by claim 1, the additional distance that ions must travel to reach the noses of the inner or middle second electrodes will substantially offset the additional number of ions received at the noses of the inner second electrode, as explained in paragraph [0083]. As also explained in paragraph [0083], it is believed that such a configuration will produce lower amounts of ozone, as compared to embodiments where the second electrodes are all the same distance from the first electrodes (e.g., as in FIGS. 5A and 5B). Further, the airflow produced using the claimed electrode configuration should be generally more even across the second array, due to the more even electric field at the noses of the second electrodes in the second array.

Claim 1 was rejected based on the electrostatic loudspeaker shown in FIGS. 4-6 of Lee, with FIG. 4 being a perspective view, FIG. 5 being a cross sectional top view, and FIG. 6 being a cross sectional side view. For the convenience of the Examiner, FIG. 5 of Lee (the cross sectional top view) is shown below, with red arrows added to show the distances downstream that the second electrodes 72' are from the first electrodes 74'.

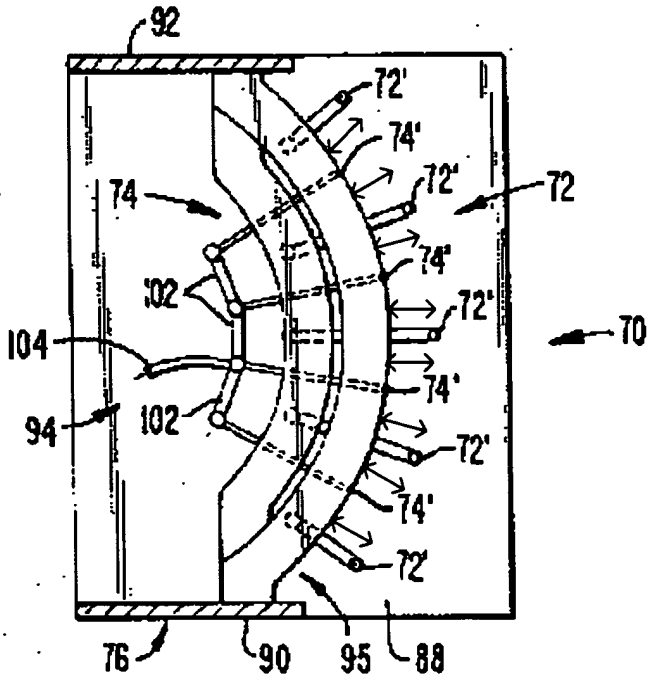

FIG._5.

As can be seen from FIG. 5 of Lee, the two outer most second electrodes 72' (highlighted in blue) *are the same distance* downstream from the first electrodes 74' that the three inner second electrodes 72' (highlighted in yellow) are from the first electrodes 74'. Thus, the embodiment of FIGS. 4-6 of Lee does not teach "at least three second electrodes including two outermost second electrodes and one or more inner second electrode located between said outermost second electrodes, *wherein each said inner second electrode in said second array is a greater distance downstream from said first array than said outermost second electrodes in said second array*," as required by claim 1.

Claim 1 also states that the second electrodes in the second array are "electrically connected to one another." For at least this reason, the electrode assembly of claim 1 is different than the electrode assembly shown in FIG. 3 of Lee, which includes a first array 60, a second array 58 and a third array 62 of electrodes. More specifically, while FIG. 3 of Lee may show that the electrodes 62' (in the third array 62) are set back from the electrodes 58' (in the second array 58), the electrodes 62' (in the third array 62) and clearly not electrically connected to the electrodes 58' (in the second array 58), and thus not "electrically connected to one another," as required by claim 1. This is because in Lee electrodes 62' and 58' are part of different arrays, that serve different purposes.

Further, in FIG. 3 of Lee, each (i.e., all) of the inner electrodes are not a greater distance downstream than the outermost electrodes, as required by claim 1.

For at least the reasons discussed above, Applicants assert that neither the FIGS. 4-6 embodiment of Lee, nor the FIG. 3 embodiment of Lee, teach or suggest the invention of claim 1. Accordingly, Applicants respectfully request that the rejection of claim 1 be withdrawn.

Claims 4-7, 30 and 39 depend from and add additional features to claim 1. Applicants assert that claims 4-7, 30 and 39 are patentable for at least the reasons discussed above with regards to claim 1, and for the features that they add. Accordingly, Applicants respectfully request that the rejections of these claims also be withdrawn.

In the Office Action it was alleged that Applicants did not provide advantages for certain features claimed in certain dependent claims. Applicants respectfully disagree. For example, advantages for an upstream focus electrode are discussed, e.g., in paragraphs [0089] - [0093] of

the specification, and advantages of a downstream trailing electrode are discussed, e.g., in paragraph [0074] of the specification.

Claim 8 requires "a second array of electrodes electrically connected to one another, including two outermost second electrodes, each having a nose, said nose of each said outermost second electrodes aligned to define a second plane parallel to said first plane, and one or more inner second electrodes recessed from said second plane so that each inner second electrode is further downstream from said first array of electrodes than said outermost second electrodes." Applicants assert that claim 8, and its dependent claims 9-13, 31 and 40 are patentable for similar reasons to those discussed above with regards to claim 1 and its dependent claims. For at least these reasons, Applicants respectfully request that the rejections of these claims also be withdrawn.

Claim 14 requires "a first array of electrodes, including N first electrodes, where N $\geq$2" and " a second array of electrodes including at least N+1 second electrodes electrically connected to one another, said second array including two outermost second electrodes, and N-1 inner second electrodes located between said outermost second electrodes and a greater distance downstream from said first array than said outermost second electrodes." Applicants assert that claim 14, and its dependent claims 32 and 41, are patentable for similar reasons to those discussed above with regards to claim 1 and its dependent claims. For at least these reasons, Applicants respectfully request that the rejections of these claims also be withdrawn.

Claim 15 requires "a plurality of ion collector electrodes electrically connected to one another and located downstream from, said ion emitter electrodes, one or more of said ion collector electrodes receives ions from principally two of said ion emitter electrodes and one or more of said ion collectors electrodes receives ions from principally one of said ion emitter electrodes, said one or more ion collector electrodes that receives ions from principally two ion emitter electrodes being located further downstream from said ion emitter electrodes than said one or more of said ion collector electrode that receives ions from principally one of said ion emitter electrodes." Claim 15 can be explained with reference to FIGS. 6A and 6B of the present application.

As shown in FIGS. 6A and 6B, the ion collector electrodes 242-2 and 242-3 receive ions from principally two of said ion emitter electrodes (i.e., ion collector electrodes 242-2 receives ions principally from ion emitter electrodes 232-1 and 232-2, as shown by paths B and C; and ion collector electrode 242-3 receives ions principally from ion emitter electrodes 232-2 and 232-3, as shown by paths D and E). The ion collectors electrodes 242-1 and 242-4 each receives ions from principally one ion emitter electrode (i.e., ion collector electrode 242-1 principally only receives ions from ion emitter electrode 232-1, as shown by path A; and the ion collector electrode 242-4 principally only receives ions from ion emitter electrode 232-3, as shown by path F). The ion collector electrodes (e.g., 242-2 and 242-3) that receives ions from principally two ion emitter electrodes are located further downstream from said ion emitter electrodes than the one or more ion collector electrode (e.g., 242-1 and 242-4) that receives ions from principally one ion emitter electrode. The advantages of such a configuration were explained above in the discussion of claim 1. Further, an explanation of why Lee does not teach such a configuration is also explained above in the discussion claim 1. For at least these reasons, Applicants assert that claim 15, and its dependent claims 33 and 42, are also patentable over Lee, and respectfully requests that the rejection of these claims be withdrawn.

Claim 21 requires "a second array of electrodes electrically connected to one another, including two outermost electrodes, and at least one electrode located between said outermost electrodes, each said electrode located between said outermost electrodes being located further downstream from said first array of electrodes than said outermost electrodes; wherein each electrode in said second array includes a substantially flat collecting surface that extends downstream from said first array. Applicants assert that claim 21, and its dependent claims 22, 34 and 43 are patentable for similar reasons to those discussed above with regards to claim 1 and its dependent claims. For at least these reasons, Applicants respectfully request that the rejections of these claims also be withdrawn.

Claim 37 requires "a first array of electrodes; a second array of second electrodes located downstream of said first electrode; and means for equalizing an electrical field created across the second array." Applicants assert that Lee does not teach or suggest a means for equalizing an electric filed created across the second array, as required by claim 37. There was no explanation

provided in the Office Action of how Lee may teach such a feature. For at least these reasons, Applicants respectfully request that the rejections of claim 37, and its dependent claims 38 and 44, be withdrawn.

III. Resubmission of a Previously Submitted Information Disclosure Statements (IDS)

A supplemental IDS was submitted to the USPTO on October 8, 2002, as evidenced by the attached copy of the date stamped return post card. Applicants are resubmitting this supplemental IDS, and respectfully request that the Examiner initial the forms 1449, indicating consideration of the documents listed thereon.

IV. Additional IDS

Applicants are submitting a further IDS herewith, and respectfully request the Examiner initial the forms 1449, indicating consideration of the additional documents listed thereon.

Conclusion

In light of the above, it is respectfully submitted that all of the claims now pending in the subject patent application should be allowable, and a Notice of Allowance is requested. The Examiner is respectfully requested to telephone the undersigned if he can assist in any way in expediting issuance of a patent.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 06-1325 for any matter in connection with this response, including any fee for extension of time, which may be required.

Respectfully submitted,

Date: 1/6/04

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